DRAFT - ENHANCEMENT AREA ASSESSMENTS & STRATEGIES

Marine Debris: Assessment

Section 309 Programmatic Objectives

I. Develop or revise programs that reduce the amount of marine and/or lake debris in the coastal zone.

Marine/Lake Debris Characterization

1. In the table below, characterize the extent of marine/lake debris and its impact on the coastal zone.

Source	**Impact** (significant/moderate/insignificant)	**Type of Impact**
Land-Based	Moderate to Significant	• Aesthetic impacts affecting tourism. • Economic impacts related to beach management practices by the municipalities and costs to tourism. • Human health and safety issues related to water quality. • Impacts on wildlife and habitat.
Ocean-Based	Moderate to Significant	• Impacts on wildlife from entanglement and ingestion. • Boating safety issues. • Impacts on benthic, beach, and shoreline habitat.

2. If any of the sources above or their impacts has changed since the last Assessment, please explain.

According to data from the International Coastal Cleanup program conducted annually in Virginia by Clean Virginia Waterways at Longwood University, land-based activities continue to generate approximately 80% of the marine debris items, while ocean-based sources account for 6% of items collected. This is consistent with national marine debris trends. The impacts of marine debris in Virginia continue to be aesthetic, economic and tourism impacts of debris on beaches and other recreational areas. Other impacts of concern in Virginia are potential effects on human health (especially from combined sewer overflows), wildlife and their habitat, and boating safety.

Land-Based
In Virginia, almost all land-based debris is attributed to shoreline recreational activities. Items such as cigarette filters, beverage cans and bottles, food containers and wrappers, and balloons are among the top ten most commonly found items. While mass releases of balloons are illegal in Virginia, balloon debris is found more frequently on beaches than in and around other state waterways. Since balloon debris can resemble jellyfish, they are a potential ingestion hazard to wildlife when mistaken for prey. Ribbons and strings on balloons also present an entanglement risk. Cigarette filters ranked as the second most common items found on beaches in Virginia's 2004 Coastal Cleanup. Smoking-related debris accounted for 12% of items collected in 2004 and 16% in the 2001 cleanup. Cigarette litter, often the result of roadway litter washing into waterways, represents a specific marine debris hazard in that it is both floatable and toxic. Other potential sources of land-based debris are combined sewer overflows and storm runoff.

Severe storm events can cause a massive influx of debris into Virginia's waterways, wetlands and coastal areas. The Virginia Department of Emergency Management reports that 20 million cubic yards of debris were generated during Hurricane Isabel, and debris removal costs reached $179 million. In such storm events, modern building materials and household goods such as asphalt roofing tile, vinyl siding and propane tanks, generate a high volume of debris that is relatively less biodegradable and more expensive to remove than those used more commonly in the past.

Ocean-Based
While only 6% of debris items found in the 2004 Coastal Cleanup were attributed to ocean-based activity, these items are often large and present direct risks to wildlife and boating safety. Derelict gear, defined as rope, fishing nets and other gear discarded or lost from vessels, has attracted concern as an entanglement hazard to boats and wildlife. Two sources of derelict gear of concern in Virginia's waters are that of unattended and unmarked or "ghost" crab pots and discarded or abandoned clam netting.

3. Do you have beach clean-up data? If so, how do you use this information?

The annual International Coastal Cleanup in Virginia is coordinated by Clean Virginia Waterways at Longwood University. The annual cleanup data is available for the use of the Coastal Program, as well as the Coast Guard, Virginia State Parks, and the National Park Service.

Many other cleanup efforts in Virginia are organized by local governments and non-profit advocacy organizations. These cleanups are not necessarily organized under the International Coastal Cleanup or Clean Virginia Waterways and annual statewide cleanup data are not available.

The Coastal Program and other agencies can use cleanup data to identify both specific sites and specific debris items (e.g. cigarette filters, balloons) that need to be addressed through pollution prevention and outreach programs.

<u>Management Characterization</u>

1. For the categories below, identify significant state ocean/Great Lakes management programs and initiatives developed since the last Assessment:

State/local program requiring recycling

No significant change. The Virginia Department of Environmental Quality (DEQ) continues to offer funding and technical assistance to local jurisdictions in the implementation of mandatory recycling programs.

State/local program to reduce littering

No significant change. Litter reduction remains a local function managed the litter coordinator in each Virginia locality, which is a function mandated by the state. Various state and local agencies continue to offer litter reduction programs such as Adopt-a-Highway, Adopt-a-Stream, Adopt-a-Beach and Adopt-a-Spot to reduce litter in coastal areas and waterways.

State/local program to reduce wasteful packaging

No new programs or initiatives.

State/local program managing fishing gear

The Virginia Institute of Marine Science is undertaking a study to develop a methodology to assess the impacts of derelict crab pots in Virginia's waters. The study will utilize side-scan sonar to georeference the location of derelict crab pots, creating a database from which to assess the pots' impacts to wildlife, crab catch, and boating safety. During the course of the pilot demonstration study on the lower York River, other derelict gear will be noted. The study will analyze potential impacts with a preliminary experiment on ghost pot trapping rates in some test areas. This study represents a step toward quantifying the impacts of derelict gear in Virginia's waters.

Marine debris concerns incorporated into harbor, port, marina, and coastal solid waste management plans

The Virginia Clean Marina Program, a cooperative effort of the Virginia Coastal Program, the Virginia Department of Environmental Quality, Department of Conservation and Recreation, and the Virginia Sea Grant office at the Virginia Institute of Marine Science, is a voluntary recognition program for marinas that go that extra step to protect coastal resources. Marinas are designated based on their compliance with a set of pollution prevention practices. The criteria include managing solid waste and educating boaters to reduce marine debris. There are currently 53 marinas participating in the Clean Marina Program, covering over 25% of the boat slips in the coastal zone.

Education and outreach programs

Clean Marina Program

The Virginia Clean Marina Program released a Clean Boating Tip Sheet as a best practices reference for boaters. The Clean Marina Program has also published fact sheets on Clean Boating and Waste Containment outlining best practices for proper waste disposal and recycling. For more information visit the Virginia Clean Marina Program Web site at: http://www.virginiacleanmarina.com/

Litter Awareness Campaign

During 2001-2004, the Department of Environmental Quality and the Virginia Litter Control and Recycling Fund Advisory Board developed and implemented an advertising campaign with the theme: *"Litter. It Just Isn't Natural."* The campaign included print, radio and television advertising aimed at litter awareness and reduction. In 2003, training sessions were held for program coordinators to maximize the campaign's effectiveness.

Lesson Plans

Many Virginia-specific lesson plans are available to aid educators in increasing awareness about marine debris and its sources. The Virginia Department of Game and Inland Fisheries has released a lesson plan entitled "Lingering Litter," which focuses on impacts to wildlife. The Clean Virginia Waterways program also makes lesson plans available through their website. The Virginia Department of Environmental Quality's Office of Environmental Education offers "Pollution Solutions," a curriculum supplement on litter and pollution prevention that includes marine debris issues and is designed to meet the Virginia Standards of Learning for grades K-12.

Cigarette Litter

Clean Virginia Waterways, the Virginia Department of Forestry and Virginia State Parks established a program in 2005 to distribute pocket ashtrays in State Parks, including those in the coastal zone. This program is aimed at reducing cigarette litter and its impacts, including contributions to forest fires and aquatic debris.

2. For the changes identified above provide a brief description of the change:

- Characterize the scope of the change
- Describe recent trends
- Identify impediments to addressing the change
- Identify successes

A major gap identified in the last Assessment was public awareness. Since the last Assessment, several new educational efforts have been launched to improve public awareness about marine debris in general, and also to target specifically the continuing problem of cigarette litter. It is too early to tell whether these efforts will result in a significant reduction into the volume of marine debris, but it is hoped a downward trend will emerge in the next five years, particularly in cigarette litter.

Conclusion

1. Identify priority needs or major gaps in addressing the programmatic objectives for this enhancement area that could be addressed through a 309 Strategy.

One priority need for marine debris reduction is a continued public awareness campaign in which outreach and educational materials are distributed to the public and educators to increase awareness of marine debris. While high-quality materials have been developed, some are no longer available to educators and the public due to lack of funding. As part of this campaign, there is also a need for increased coordination with port facilities, tourism boards and gear manufacturers to increase awareness of the sources and impacts of marine debris. In addition,

there is a need for increased awareness of local litter groups of the connections between land-based litter and marine debris.

Another gap appears to be the continued inability to quantify scientifically the nature and extent of marine debris. Currently all data is dependent on volunteer coastal cleanups, so the amount of debris collected depends on many variables, such as the number of volunteers involved, recent storms or other activity, and the areas covered. Further, the cleanups are focused mainly on coastal beach and stream areas, but not necessarily on debris floating at sea. An impediment to overcoming the lack of scientific data is that scientific protocols for data collection need to be pursued. Once protocols are established, studies are needed on the quality and quantity of marine debris and its impacts on fisheries and wildlife habitat. The VIMS preliminary study on derelict crab pots stands to build capacity at the state level to quantify the impacts of derelict gear, but much more is needed. A better understanding of the potential for different gear designs for specific purposes would help inform the development of potential new enforceable policies. These studies should be used as the basis for development of policies, enforceable by VMRC, for gear restrictions or modifications to reduce marine debris.

A major gap identified in the previous Assessment, that of state and regional coordination, still remains to be addressed. A major impediment to closing this gap is the lack of a central state office charged with reducing debris. The function of managing litter is assumed in part by various state agencies governing domains such as parks and roads, and in part by local governments through their litter coordinators. However, in practice, the issue of debris cleanup in Virginia continues to be the domain of cooperative efforts between nonprofit champions, such as Clean Virginia Waterways, state agencies, and local government efforts. Consideration should be given to the establishment of an inter-agency task force on marine debris that would explore mechanisms for state and regional coordination, including coordination of clean-up efforts and data collection and analysis. One issue this inter-agency task force might consider, although it is a difficult issue in Virginia, would be whether and how a strategy for beverage bottle and can redemptions might be developed.

Lastly, stormwater management could be enhanced along state and locally maintained roadways to prevent debris from entering streams and being deposited in coastal waterways.

2. What priority was this area previously and what priority is it now for developing a 309 Strategy and designating 309 funding and why?

1997 Assessment		Last Assessment (2000)		This Assessment (2005)	
High	___	High	____	High	___
Medium	_✓_	**Medium**	_✓_	**Medium**	_✓
Low	___	Low	____	Low	___

This ranking is based on the Coastal Policy Team's acknowledgment that marine debris, while not a high priority, is an issue of importance in Virginia that needs further effort. Specifically, the CPT recognizes that additional quantitative and qualitative data are necessary to better characterize the impacts of marine debris on Virginia's economy, wildlife, public health and boating safety. However, no strategy is proposed at this time.